

33655/B A N 73338
Experimental Dissertation

ON THE
NATURE, CONTENTS, and VIRTUES
OF THE
HYDE Saline Purging Water,
Commonly called
The *HYDE SPAW*,
NEAR
Cheltenham in *Gloucestershire*.

IN
Which is proved from *Facts*, that these Waters
are of the same Nature, and considerably richer
in Salts than those of *Cheltenham* :

AND
The various Distempers in which they are Salutary,
fully set forth and demonstrated, to be in every
Respect superior to the *Cheltenham* Water ;

WITH
Directions for DRINKING and BATHING.

BY
DIEDERICK WESSEL LINDEN, *M. D.*

L O N D O N :

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Town and Country.

MDCC LI.



TO THE
RIGHT HONOURABLE
Fulwar *Lord* CRAVEN, &c,

MY LORD,

YOUR *Lordship* having, with your usual *Humanity*, condescended to accept of this Address; it is with inexpressible Satisfaction I do myself the Honour, to lay at *your Lordship's* Feet, the following Sheets; to which you have a natural Title, as they treat of that salutary Fountain, the HYDE SPAW, rising in *your Lordship's* Estate.

I shall not presume to entertain *your Lordship* with Flattery, so usual with Dedicators; knowing that this would offend a *Nobleman* of your sagacious Turn of Mind. But as I have not found, in any Part of the World, so noble a Spirit, as among the *English* Peers; and having been so fortunate, as to receive signal Favours from many *Noblemen* of this Country; I cannot forbear entertaining a peculiar Veneration

ration for them : And, as you are a Member of that *illustrious* Body, it is with peculiar Pride I embrace this Opportunity, of giving this publick Testimony of my Respect for *your Lordship*.

I should naturally stop here, did I not think it my Duty to inform the Publick, that *your Lordship* has been a most excellent Patron to the saline Spring above-mention'd, whose Streams convey Health and Vigour. And that when the meanest Artifices were employed, to stifle its Success in *Embrio*, or to *monopolize* it; *your Lordship*, with the Generosity devolved to you from your renowned Ancestors, disdained all such venal Attempts ; and, by that Means, devoted our salubrious Spring to publick Utility.

Your *Lordship* will please to pardon my present Presumption, as it arises wholly from the sincere Dictates of my Heart; and as no one can be with more profound Respect, my Lord,

Your Lordship's most humble,

Most obedient, and most devoted Servant,

THE
P R E F A C E.

*T*HERE are few Subjects where more has been writ, and the Publick troubled with more Books, filled with idle Fancies, and ridiculous Hypotheses, than that of the Medicinal Mineral Waters : But as it is an important Branch of the Medicinal Science, I sincerely wish it were established into a natural, experimental, and systematical Order, so that it might be clearly understood ; and our Fellow-Creatures be enabled to reap those Benefits from it which Providence designed it for. How far I have offered Materials towards this Structure of natural Knowledge, I leave for others to determine ; and if it should be judged that I have any ways contributed thereto, the whole

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whole of my Aim is answered; and I hope I may be indulged, if I have committed any Faults, through want of Correctness in the Language I have presumed to write in.

We ought not to stop in our experimental Enquiries into the Mineral Waters, as we, hitherto, are far from having discovered all their Contents. I have, with indefatigable Pains, lately found out what some of the greatest Men, for several hundred Years past, have looked upon as impossible, viz. a Method to extract the volatile elastic Spirits from the Mineral Waters; and to render them patent for Examination to all our Senses, which may be done by various, natural, easy Processes: And also for preserving the volatile Spirits in the Mineral Waters, so that they may be carried to any Part of the World, without the least Diminution. And whenever I have an Opportunity to publish these Discoveries, I make no Doubt but they will be greatly improved by the more ingenious Part of Mankind, and, by that Means, be rendered of great Utility to the Publick.

It is much to be regretted, that the Thermæ of Bath, in Somersetshire, are not sufficiently analyzed: And it would be well if the voluminous
Number

Number of Books which have been wrote upon it, were all put into a Crucible, and purified from their Dross; then to add to this, a Register of the true Contents these Waters possess, obtained by natural and rational Experiments. I apprehend that we should then discover Things, in these Waters, that hitherto have never been thought of; and which might be of infinite Service to many of the Afflicted in this Metropolis, if these Waters were imported with their Ætherial Mineral Spirits totally preserved.

In this, as well as in my other Works of the same Nature, I have strictly adhered to, and wholly guided myself by Facts deduced from natural Experiments only. And if any learned Gentleman has any Thing to urge against it, I shall expect he will act upon the same Principle of experimental Facts, or else it will be to no Purpose for him to meddle with it; because I will have nothing to say to those modern Literati, whose Excellence consists only in a meer Gingle of fine Words, whereby they suppose Things ad infinitum; but are utter Stangers to Facts. Such weak contemptible Book-Worms as these, I shall ever think below my Notice; and will assure them, once for all, that they never must expect any Answer from me.

As

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As to the present Hyde Spaw Waters, it will appear, by the same infallible Guide, that they are in every Respect superior to those of Cheltenham; which indeed is not in the least surprising, because Providence has been more bountiful to Hyde, in giving it a much stronger subterraneous Current; which yields at least five Times more Quantity of Water than the Cheltenham Spring: So that, according to Nature's Rule, Hyde Water must be considerably richer in its Contents and Virtues: And as I have Truth on my Side, which will ever stand the Test, and bear down all Opponents, it matters not what may be said against, or objected to it.

I N T R O-

INTRODUCTION.

THE *Hyde Spaw Waters*, like those of *Cheltenham*, *Llandrindod*, and others of the same Nature, are saline purging Waters, and have no manner of Connexion with any Chalybeate Waters whatever; though there are indeed Chalybeate ones that contain a purging Salt; but notwithstanding this, they do not come under the Rubric or Appellation of the Saline, but are in Reality no other than Chalybeate purging Waters, which are quite of a different Quality to those we are here treating of; because the Iron Earth is either predominant over, or gives the Texture to the Salts; for this Reason their Medicinal Effects are as various as the Constitutions that use them; but where the Salt is predominant, without having a *Bolor* Iron Earth for its Basis, or Texture, then they purge in all Constitutions alike: In these Waters we never find any Iron Earth, or Chalybeate Contents, that is so far preceptable, as to have Power of Action; therefore we may very justly distinguish these purging Waters separately, and totally exclude them from the Chalybeates, as not having the same medicinal Analogy with them.

What I mean by the Texture given to such Salts with Iron Earth, as are found in some

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Chalybeate

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Chalybeate Waters, must be understood in an experimental Sense, in such Manner as will verify this Assertion, so soon as the Salts extracted out of these Waters are chemically analized; when it will evidently appear, that where a fix'd vitrioline Acid meets Chalybeate Waters, it will entangle itself in the *Bolor* Iron Earth (the constant Concomitant of Chalybeate Contents) and thus generate and constitute a neutral Salt, by dissolving the *Bolar* Earth; and this is the Means whereby it renders itself saline. Very few Chalybeate Waters are without this sort of Salt, some contain it in greater, and others in lesser Quantity.

It is already observed, that these Salts do not act in one uniform certain Manner upon the human Constitution, and I have ever remarked, that where they meet with moist or phlegmatick Habits of Body, they either violently purge or vomit, and sometimes both; but where there is a sanguine hot Disposition predominant, they either act as Sudorificks or Inflammatories, and Costiveness, and so in other different Degrees, unnecessary to mention here *.

I am of Opinion the Medicinal Mineral Waters were much better known by the Antients, and more justly distinguished, according to their different Qualities, than in the present Age: In *Palastine* there were (and undoubtedly are still) several Sorts of natural hot and cold Medicinal Mineral Waters, which they made use of in various Shapes, such as

* See our Treatise on Chalybeate Waters, Chap. I. and IX.

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Bathing, Drinking, Fomenting, &c. and the great Variety and Multiplicity of Diseases these Waters cured, caused some superstitious Jews to attribute to them miraculous Virtues (a Spirit that seems to be revived at *Glastonbury*) but the orthodox Part of the Israelites very justly (the Pool of *Bethseda* only excepted) ascribed the healing Effects to their natural Mineral Contents, and the saline purging Waters made a separate Branch amongst the rational part of these People, in those early Times.

Hierapolis was antiently famous for its Medicinal Mineral Waters, and by the most authentic Records it evidently appears, they were not ranked among the *Acidulæ*, or *Thermæ*: According to *Strabo's* Account, these Waters petrify'd in the Space of a Year, when all that Time exposed to the Air; and yet were endowed with such extraordinary Virtues, as to render the Fields they water'd exceeding fruitful, and proved a present Remedy in innumerable Distempers, to those that used them *.

That these were saline Waters, is manifest from their petrifying and manuring Qualities, as both depend upon one and the same Principles; neither of which could have been perform'd, without the great Abundance of Salts which they contained; because the Salts in Manure dispose and contract the Substance that composes the Vegetable, so as to form and expand it into a Bulk, or complete Plant;

* Universal History, Vol. IV. Page 438.

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when on the other Hand, where it does not meet with any vegetating or growing Earth, it is reduced by Stagnation, into a kind of *Caput Mortuum*, which contracts and coheres so intimately together by the Helps of the *Acidum Vagum*, from the Air, that in the End it produces a perfect *Petrefactum*.

I could more fully make it appear, if the Brevity of this Discourse, to which I have confined myself, would admit of it; but from what has been already said, it is sufficiently evident, that the Antients were acquainted with more Medicinal Waters than *Thermæ* and *Acidulæ*, and that they well knew such Waters, whose Effects and Qualities were saline purging, and therefore very justly not ranked among the *Acidulæ*; but here in *England* all cold Medicinal Mineral Waters hitherto pass under the general Name of *Spaws*, or *Spaw Waters*, by which the Moderns comprehend the *Acidulæ* of the Antients. As the *German Spaw Waters* (which are Chalybeates only) was certainly the Cause of their being sought for in *England*; from whence the Name *Spaw* has been given to all cold, Medicinal Mineral Waters, without any Distinction of Qualities between the Iron and saline Waters; but as this indisputably is a gross Error, which ought to be rectified, by experimental Examinations of the Nature and Virtues of these too long neglected saline Waters, and set forth and distinguish'd, in a proper and clear Light to the Publick; whereby Ignorance, Confusion and Danger may be avoided, when they are administer'd as Medicines,

for

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for the Relief of Infirmities of the human Body.

My most learned and ingenious Friend Dr. *Short*, is the first here in *England* that has made any material and intelligible Distinction between Chalybeates and saline purging Waters; it is therefore but just to pursue a good and useful Scheme when Necessity demands it.

In the Subject of the present Discourse, I shall wholly confine myself to the saline purging Waters, such as possess a neutral Diuretick, purging Salt, commonly called *Sal Enixum*, and are no ways further related to any other Mineral Waters than as liquid Fluids, from whence they are intitled to the general Name Water; but as Medicines that constitute a Specie for themselves, in like Manner as *Acidulæ* and *Thermæ*; the Waters of the *Hyde* Spaw being of this Genus, I shall, in Pursuit of these Disquisitions, treat of them only.

If I chose Digression, I could here indeed give an experimental History of many remarkable Mineral Waters in various Parts of *North Wales*, but as they are not of a saline purging Nature, it is quite foreign to my present Purpose; but as I have ventured just to mention that Country, I must beg to be indulged while I say a few Words in Justice to one of the Waters.

North Wales is a Country that bids fair to be in future Ages the Metalline and Mineral Storehouse, whenever the Bowels of its high Mountains come to be delivered of their most precious

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precious Fruit, they are now in Labour with. The remarkable Medicinal Mineral Water I have craved to mention, is in one of the most pleasant Hills in the Island of *Anglesea*; this Water strikes a red Colour with Syrup of Violets, and has so many other surprising Qualities, that clearly proves it to be no ways related to the Chalybeates, or saline purging Waters; so that for several Reasons, 'tis beyond Dispute with me, that this is one of the true *Acidulæ* of the Antients, and that the Chalybeates which are taken at this Day for them, were no ways comprehended under this Denomination, but that their true and only *Acidulæ* were such as these I am now speaking of, which will strike a red Colour with Syrup of Violets.

The *Anglesea Acidulæ* above-mention'd, are very extraordinarily efficacious in Numbers of chronical Cafes, where the saline purging Waters are not proper to be used; and I am really sorry, that this salubrious Fountain is not adapted to publick Utility; but whenever the Owners, in whose Lands it issues forth, will take the laudable Example from the noble Lord of the *Hyde Spaw*, and permit me the Power of introducing them to publick Knowledge, I shall gladly embrace the Opportunity as soon as Occasion offers.

Many saline purging Springs have lately broke forth in this Nation, several of which about this Metropolis are much cry'd up, and strongly recommended; but the chief Matter of Consequence, *viz.* to enquire experimentally into their

their natural Virtues is neglected; from hence it seems to me, that every Spring which fortunately makes its Course through a Dunghill, has thereby acquired a Privilege to be palm'd upon the Publick as extraordinary salutary saline Waters, when perhaps their Salts are more properly adapted for the Manure of Land, than for any Relief of human Infirmities. Most of these Springs have nothing better in Foundation for their Support than meer Novelty, like as at *Glastonbury*, where they have brought it into Vogue by a Dream, or rather Romish spiritual Legerdemain, which is Matter of great Astonishment to me, that People of good Understanding in all other Respects, can be so blinded, and not see through this meer Cobweb-lawn that veils their Senses, but will greedily swallow such nasty foetid stinking saline Draughts, without the least rational Account of their natural Properties, when at the same Time they may have Plenty of true, clean, and pleasant Medicine in the *Hyde*, and other saline purging Waters; let them but particularly consider this one indisputable Maxim, *that all Medicinal Salts are able to manure Lands, but all manuring Salts are not fit Medicines*; and by what Means will they be able to restore a Constitution injured, or perhaps ruined, by these infatuated Novelties.

But it seems that such a strict Scrutiny, and proper Examination, as I have here pointed out, as absolutely necessary for the Preservation of human Kind, is laughed at, ridiculed, and altogether

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altogether prevented, as much as possible, by the mercenary Proprietors of many of these Mineral Fountains, being fearful of having them set forth to the Publick in their true Light, lest it should prove hurtful to their lucrative Views; to support which, by artful Contrivances, they seldom fail of gaining over the vulgar Multitude to their Interest, who are always ready to run away with every idle Story, howsoever inconsistent in itself, without enquiring after one Grain of rational Ground for their Belief; but perhaps this being no longer sufficient to support these Proprietors Measures, they have thought proper to call in to their Aid a little Drum Pulpit, which they rattle upon like Children that are diverted with those Play-Instruments presented them by Papa at a Fair; in short, they have got over a few weak, disappointed Clergymen, to write and preach in Favour of their Waters: To how low, mean and vile a Purpose is Religion prostituted! and what a Scandal it is, that so sacred a Function should be so far debased, as to wrest, nay, pollute the Holy Scriptures, to sanction and cover over Craft and Deceit!

Since the Clergy have taken it into their Heads to write and preach of miraculous Mi-Mineral Waters, the new-fashion Writers, that they might not be behind Hand with them, have given us long Accounts, and tell us of many Contents and Principles in Mineral Waters, which, it is well known, have been long ago exploded with fundamental Experiments, and by the same indisputable Rules, manifested
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they are destitute of the Contents that are attributed to them; hence it is plain, that these *Polyhistsors* were utterly unacquainted with this Subject; and thus one Blind leads on another, even till they are plunged into the grossest of Errors.

But this happens not to be the Case with the *Hyde* saline purging Waters, for they stand in no Need of such unnatural Assistance, as their natural Contents are such, that will in all Probability render it a lasting, and at all Times a standing Medicinal Mineral Water; but as this Spring has been but lately discovered, and is hardly yet much known to the Publick, it will be but just, and necessary, to begin with an experimental History of it, by which Means every Patient that chuses to make Use of these Waters, will be enabled to know what he takes, and at the same Time be assured, that he swallows no filthy Dung-hill Salts, so very detrimental in all Constitutions; to obtain which End, I shall divide this Discourse into the following Parts.

C PART I.

P A R T I.

Experiments on the *Hyde* Spaw Waters.

P A R T II.

To examine and compare the *Hyde* Spaw Waters, with those of *Cheltenham*, which will enable us to judge if they are equal, or exceed them in Virtue.

P A R T III.

Corollaries, and Conclusions from the Experiments, whereby their Virtues are rendered in a clear Light.

P A R T IV.

In what Distempers these Waters are salutary, and in what Manner they ought to be used.

P A R T I.

Experiments on the *Hyde Spaw* Waters.

THAT these Waters are of a saline purging Quality, I think will sufficiently appear from the following Experiments; but as it has been ushered into the World under the Title of the *Hyde Spaw*, we cannot take upon us at present to change the Name to its proper Characteristick, but must let it pass with this improper Denomination, till the Doctrine of distinguishing Mineral Waters, according to their Nature, is more fully known, and better established than at this Day, when I make no Doubt, but its Title will soon be changed for one that is more just and naturally adapted to it.

This salutary Spring called the *Hyde Spaw*, is situated near *Cheltenham*, in the Parish of *Restbury*, in the County of *Gloucester*, in the Estate of the Right Honourable Lord CRAVEN, which illustrious Nobleman has so remarkably and effectually extended his Protection and Goodness to this Fountain of Health, that it is already endued with necessary and convenient Lodgings for all Sorts of Patients;

and by the same laudable and prudent Means a commodious Hot and Cold Bath has been erected, and is constantly prepared from these salutary Waters, whereby many very extraordinary Cures have been performed, and are now daily used to very great Advantage. To come then to a true Knowledge of the Nature of these noble Waters, I shall proceed immediately to the Experiments, and so thoroughly scrutinize and set them forth, as will effectually enable us to account rationally for the seemingly miraculous Cures these Waters have performed.

Experiment I. The elastick *Ætherial Mineral* Spirits, entangled in *Spelter* or *Zinck* Ashes, extracted from the *Hyde Spaw* Waters, are in every Respect as to Smell, Taste, &c. &c. like (and equal) to the fine *Ætherial* acid Liquids that are distilled from *Ambergrease* *.

Exp. II. This Water was exposed in an open Glass to the Air in *August* last, when it remained perfectly clear for eleven Days, without the least Change or Alteration of its Shape, Form, or Texture; but on the twelfth Day it began to yield a small Quantity *Præcipitat per se*.

Exp. III. With Spirit of Salt this Water sparkles much, but they both readily unite with one another; and the Salt that is ob-

* This Experiment will be more clearly understood when the Method of extracting the Volatile Spirits from the Mineral Waters is better known.

tained from this Mixture, appears in cubick square long spangled Chrystals, and in every other Examination plainly evinces, that they have attracted the Acid of the common Salt from the Spirit.

Exp. IV. *Aqua-fortis* and Spirit of Vitriol act in the same Manner as the Spirit of Salt, and when jointly reduced to Salts, they modify the Figures of the Salts, agreeable to the Nature of the vitrioline Salts.

Exp. V. Oil of Vitriol causes a gentle Ebullition, and makes it boiling hot, which Hotness continues a considerable Time, but the Oil of Vitriol is not to be perceived in it by the Smell.

Exp. VI. Add *Oleum Tartari per deliquium* to those that are mixed with the Acids of Experiment III. IV. and V. it causes a remarkable and more than ordinary Effervescence.

Exp. VII. With Syrup of Violets it strikes a green Colour.

Exp. VIII. Adding Oil of Vitriol to that Water which was coloured Green with Syrup of Violets, it changes it into a fine red Colour without any Effervescence.

Exp. IX. With volatile Spirit of Hartshorn this Water turns milky.

Exp. X. Solution of Pearl Ashes changes this Water into a very white Pearl Colour, and curdles it at the same Time.

Exp. XI. Oil of Tartar *per Deliquium* curdles this Water, and turns it of a very deep Pearl Colour.

Exp. XII.

Exp. XII. With Solution of Salt of Tartar this Water strikes a Milk-white Colour, and curdles.

Exp. XIII. Spirit of Sal Ammoniac causes a Milk-white pearlish Colour, and curdles; but a Solution of Sal Pêtre mixes with this Water without any Alteration whatever.

Exp. XIV. When the Water with the Alkalies of the six last Experiments is added to those that contain the Acids, the whole Mixture turns of a fine red ruby Colour, but dissolves the curdled Particles in such Manner, that they cannot be perceived.

Exp. XV. I separately try'd it with every Alkaly, and the Oil of Vitriol, but none of them produced the red Colour, except the volatile Spirit of Hartshorn; the other Alkalies turned limpid clear with the Oil of Vitriol, and reunited the white Precipitate with the Water.

Exp. XVI. With Powder of Galls this Water strikes a dark Olive-green Colour.

Exp. XVII. Logwood tinges this Water of a most beautiful Claret Colour, which cannot be destroyed by Oil of Vitriol.

Exp. XVIII. Red Sanders colours this Water of a dirty Yellow; and on letting it stand till the next Day, there appeared a blueish Hue of about an Inch thick upon it; but with Logwood the Claret Colour continued in perfect Lustre and Brightness after standing four Days.

Exp. XIX. Sugar of Lead changes this Water to a milky Colour, but there was not
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so much Curd perceptible as when mixed with Alkalies.

Exp. XX. Mercurius Sublimate turns this Water into a bright Pearl Colour.

Exp. XXI. Crude Sal Ammoniac makes no Manner of Alteration in this Water mixed with it, either hot or cold.

Exp. XXII. Solution of Silver turns this Water of a Milk-white Colour, which when exposed to the Fire, it causes a light Precipitate, which is moved by the boiling Motion of the Water, and after some Time boiling, changes into a fine white Whey Colour.

Exp. XXIII. With *Rhenish* Wine and Sugar this Water works in the same Manner as the *Selter* Water does with it, and affords the like pleasant Taste.

Exp. XXIV. The Salts of this Water are very easily obtained, and chrystalized after the usual common Manner.

Exp. XXV. Each Gallon of this Water contains sixteen Grains of neat fine Salt more than those of *Cheltenham*; and although this Experiment was made in *August*, yet, notwithstanding, these Waters contain very near the same Quantity in the Winter, the Spring being very well secured from other Waters communicating with it.

Exp. XXVI. These Salts extracted from the Water, and again dissolved in distilled Rain Water, are again obtainable by *Inspissation* and *Sublimation*, in like Manner as Sal Ammoniac is produced.

Exp.

Exp. XXVII. With Oil of Vitriol, Spirit of Salt, Spirit of Vitriol, and *Aqua-fortis*, these Salts do not cause the least Effervescence.

Exp. XXVIII. Nor do they cause any of the like Motions with Solutions of fix'd and urinous Spirits of Alkalies.

Exp. XXIX. These Salts strongly calcined in a Crucible, the watery Parts exhale, and the Salt turns into a fine white Powder, which retains its saline Nature as to Solution and Taste, and cannot, with the strongest Fire, be reduced into an Alkaly, without the Addition of another Body.

Exp. XXX. The Salts thus calcined, will not cause any Effervescence or Ebullition with the strongest Acids or Alkalies.

Exp. XXXI. On the Glasses out of which this Water is constantly drank the Salts presently chrySTALLIZE, which they also do on the Sides of the Well like clear transparent Ice.

Exp. XXXII. This Water rises up exceeding clear, is of an agreeable bitter salt Taste, and weighs fifty-two Grains heavier in a Pint than common Water, and increases no more than five Grains in a Pint by standing, or in Carriage to this Metropolis.

Exp. XXXIII. The Sediment of a Gallon of this Water that remains after all the liquid Parts are exhaled or boiled away, is full seven hundred and fifty-two Grains, in which the Salts are retained.

Exp. XXXIV. The Earth after the Salts are extracted from it, proves in every Respect

spect to be an Alkaly, but is very light, and exceeding white and fine, but through a Microscope or Magnifying Glass the Particles of this Earth appear in Flakes, like *Terra foliate Tartarii*.

Exp. XXXV. This Earth is incapable of being rendered into Calx or Lime with the strongest Fire, and seems to be of a Genus between *Glacis Morie* and *Talc*, but is dissolvable with Acids.

Exp. XXXVI. The Earth dissolved in *Hepar Sulphuris*, and then distilled in a Retort, there appears a fine oily lubricating Spirit, without any corroding Matter.

Exp. XXXVII. This Earth, when put into a Crucible with smelted Glass, will not perfectly mix or unite with it, but gathers itself together in Flakes throughout the Glass.

Exp. XXXVIII. A little of the Salts out of this Water, thrown into a Crucible full of smelted Glass, will change the Glass Metal red for a few Minutes.

In my former Works on this Subject * I have, in a just but civil Manner, inveighed against the geometrical, speculative Closet Chemistry, I mean such as amuse themselves with the Atoms and Figures that the Salts produce in their ChrySTALLIZATION, by which Means they endeavour to persuade the World that they have a vast deal of superabundant Learning; and to strengthen this Opinion, and more easily impose upon the Publick, the

* Our Treatise on the Origin, Nature, and Virtues of Chalybeate Waters, Page 6.

saline Figures are pompously ushered forth in Prints, and thereby silly and unphilosophical Knowledge is propagated by the ignorant Fanaticks.

But howsoever upright my Intentions, I have met with little else than Frowns from a certain Quarter for my Zeal in promoting real Knowledge, and for no other Reason, than that I have ever been for trying all such Salts we meet with, by chemical Analization, as I esteem a thorough Knowledge of Salts, to be a considerable Branch of chemical Learning; it is therefore but natural to suppose, that he who views and examines the component Parts distinctly and separately, with all or most of his Senses, must come nearer the true Point, than he that judges by outward Figures, only as they appear to Sight, when all the Parts that constitute the Concrete, are united in one compound State.

It is therefore evident, this empty Farce can have no Place with rational Men; for to argue otherwise would be the same Thing, as if an Astrologer should claim Pre-eminence over the Anatomist, and by outward Signs and Predictions from the Cadaver, determine, what only can appear by Dissection.

Yet strange it is, that these indisputable Facts, are not able to make any right Impressions on Gentlemen, from whom we ought to expect some Show of solid Judgment; but the Case being otherwise, leads me to suspect their Design is to stifle the Matter, and that they don't chuse to own the Truth; or else,

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to judge more favourably of them, they are surprisingly infatuated with ridiculous Shadows, and downright stupendious Nonsense. One of these Gentlemen in particular, is become so warm, that in his Discourse on Mineral Waters he breaks out in Anger thus *.

‘ Such Gentlemen to conceal their Fraud,
‘ enveigh against the chrystalizing of natural
‘ Salts, least their Genus and Species should
‘ be known and detected.’

Thus we see from the Acrimony that appears in this Author’s Expressions, that Spleen and Passion were uppermost with him, else, as I believe him to be a Gentleman, I think he could not have been guilty of such gross Expressions; for what Fraud can it be, or what Ends can it possibly answer, to conceal the Figures of chrystallized Salts? and by what Means the Genus and Species, of Salts are to be known by their Figures, he has not been able hitherto to inform us of.

For my own Part I will candidly confess, that I have not so much Penetration as to know the Salts by their Chrystal Figures, but when I will be acquainted with their Natures, I know no other Way than to reduce the Contents to their first original State, by which Means I am able to comprehend them separately with more Senses than the Eye-sight only; but as such mighty Stress seems to be laid upon the bare Figures of Salts, I do assure those Gentlemen, that I can chry-

* The Contents and Uses of *Neville Holt Spaw Water*, Page 22.

stallize Salts, and to my own Knowledge there is no Fraud intended ; and to convince them of both, I here present the Virtuosi of the Corpuscular Philosophy, with the Sculpture of the Crystals produced from the *Hyde Spaw* Water, which were engraved from the very Originals ; and I should be thankful, and infinitely obliged, to any of those great Men, that will be so good to inform me, how I may from thence form any Judgment, or understand the true Genus and Species of these Salts.

No. 1. Are the Figures of the Chrystals produced by lixivating the Salts out of the Sediment with distilled Rain-water ; which Solution was in an equal moderate Heat, in a Glass in warm Sand, evaporated, till it came to a chrystalline Consistency.

No. 2. was lixivated in the same Manner as the above ; but the Evaporation was not equal to that of the former, for sometimes it boiled violently, and at other Times it stood several Hours till it became quite cold, at last, by repeated Boiling it was brought to such a chrystalline Consistency as is here represented in the Print.

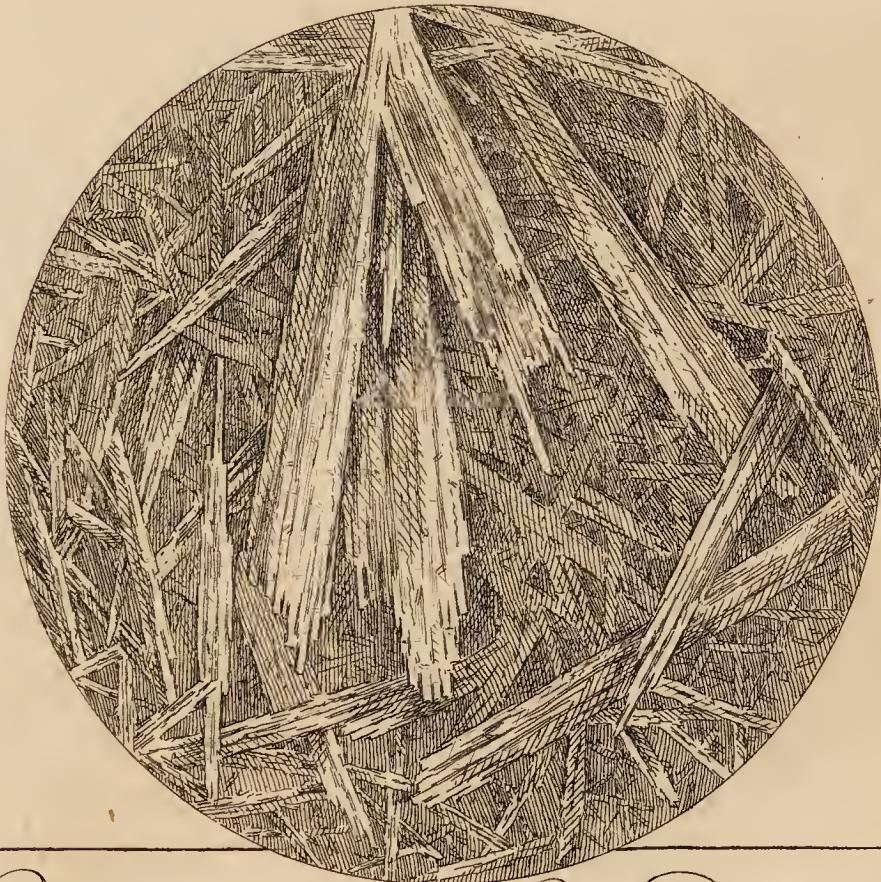
Thus we see, that the unequal Motions of the Salts in the Operations will produce different Figures in their Chrystals, which will hold good in every Operation *ad infinitum*, and yet the innate Nature is not changed ; I would therefore ask this single Question, How any sure or reasonable Judgment can be formed in such a Chaos of Uncertainty ? But as it is a Bauble that pleases some, I will not presume

N^o 1.

Pag. 20.



N^o 2.



To the ingenious M.^r Fr. Brandenburg, Che.
and M.^r R. Fiddes, Mineral Water Purveyor;
This Plate of the Hyde Salts inscrib'd by the Author.

sume to disturb them in their speculative Amusements : But as this, my first saline Exhibition, appears to be finer Hieroglyphicks than any I have ever yet seen from the Adepts of this Science ; I think therefore it must be allowed, that the *Hyde* Salts claim a just Pre-eminence to all others hitherto known.

If it were true that these Figures, like Letters, denote the innate Nature of the Salts they are chrystalized from, this Business might then be rendered of extraordinary Utility to the publick Service ; for as most Salts are the Production of Fossils, washed from them by the Water that strains through, and will retain the Nature of the Fossil they are received from ; and as no Salts are more effectually strained through their productive Matter, than Urine Salts, because they are several Times carried by the Circulation through the whole Machine, and every Vessel of the Body has a Share in producing these Salts ; so by the same Parity of Reason, upon the Chrystal Figure Doctrine we may suppose, that Urine Salts have imbibed and attracted all the Imaginations and Projects, either publick or private, that were contained in the Person they circulated through ; and what an extraordinary Service, might this be to the Government, to be possessed of an Adept in this uncommon Art ; for if any Subject should be suspected of Disaffection, his Urine need only be collected, and the Salts chrystallized from it ; then if it should happen that he is a Jacobite, *Charley*, doubtless, with his Plaid and Target will appear :

22 *Hyde Waters compared*

appear: Besides, an Adept of this Class might accumulate much Wealth in a private Station, as many jealous Husbands would probably give him any Thing he could reasonably ask, to know their Wives Amours; or an eminent Physician that has a great Personage for a Patient, but does not know what his Distemper is: Here both might be immediately satisfied by the Chrystals of the Salts from the respective Urines. But this Hint only by the bye, which if taken, would give a far greater Advantage than the most *Prima Facie* are apprized of.

P A R T II.

To examine and compare the *Hyde* Spaw Waters, with those of *Cheltenham*, which will enable us to judge if they are equal, or exceed them in Virtue.

THE comparative Part of the *Hyde* Spaw Waters with those of *Cheltenham*, not only with Respect to their Equality, in Nature and Virtue, but also to shew which of these two justly claims the Pre-eminence, is a Task, however necessary, extremely disagreeable in itself, more especially as the *Cheltenham* Waters, before the Discovery of the *Hyde* Spaw, have with great Truth challenged the Preference to all purging Waters in
Great

Great Britain : It is therefore but natural to conclude, that I shall in Course draw down upon me, like a Torrent, a Croud of Votaries to that long celebrated Water, whose favourable Opinion I must expect to lose (if not become my Enemies) for presuming to introduce any Thing in Competition with it, much less so potent a Rival, as its neighbouring Fountain the *Hyde Spaw*. And here permit me once for all to declare, that I have no Manner of partial Prejudice against those excellent Waters of *Cheltenham*; nor am I moved to this Work by any Convenience or Service I purpose to myself, but on the contrary the sole Good of the Publick, in the Preservation of human Kind, has ever been my only Views; in the Pursuit of which upright Intentions, should I meet with any ungenerous Returns, or unnatural Persecution (as I have too often experienced in some of my other Undertakings, which certainly would have proved very beneficial to the Community, had I not met with unparalleled Obstructions therein) I shall not repine at it so far, as it affects my personal Concerns only, but can glory in so good a Cause, and at the same Time look down with Compassion on the Baseness of Mankind, and pity the degenerate Age in which we live.

As I have strictly adhered to Facts, deduced from Experiments on these *Hyde Spaw Waters*, I think my Impartiality will more conspicuously appear, when I here in a
Note

24 Hyde Waters compared

Note * give *Verbatim*, what has been said in Favour of the celebrated Waters of *Cheltenham*, by the most learned and ingenious Doctor *Short*; and as I shall compare his Experiments on those Waters with those on the *Hyde Spaw*, it will be an effectual Means for the
Judicious

* Dr. *Short*, in his Essay towards a natural, experimental and medicinal History of the principal Mineral Waters, &c. Page 77, 78, 79, and 80, gives the following experimental Description of the *Cheltenham Waters*:

Of Nitro Calcarious Purging Waters.

These are, *Cheltenham*, *Comner*, *Moretonsee Pump*, *Clifton*, &c. *Cheltenham*, six Miles from *Gloucester*, and seventeen from *Worcester*, justly challenges the Preference of all the Purging Waters of *England* of this Class. It rises out of a Sandy Soil, the same on which the Town, and all two Miles about it stands; the Situation is elevated, therefore dry and pleasant, yet most fruitful, hence a plentiful Product of all Things necessary for Life and innocent Pleasures. This Market Town lies only two Miles from the lovely *Oolds* of *Oxfordshire*, high charming Hills, richly cloathed with much sweet Grass, Herds, and Flocks, a most extensive, beautiful Prospect by Sea and Land, a dry, thin, pure, healthy Air, fit for Pleasure and Diversions all the Summer. A little South of the Town, is a small Ascent, under whose Sand is a strong thick blue Clay or Marle; here is a Close where an ouzing flow Spring was long observed, which spread a few Yards on the Surface, and then evanished; to this came daily several Flocks of Pigeons, which one Mr. *Mason* taking Notice of, and having some Land of his own joining within eight or ten Yards of the Spring, he digged to a considerable Depth in his own Ground, expecting to find the Original there, but missing of it, he purchased the Field with the Spring; then it was made into a Well, and after some Experiments made with the Water by the late ingenious Dr. *Baird* of *Worcester* and the present Dr. *Greenvile* of *Gloucester*, it was sold medicinally till 1721, that a very worthy and ingenious Gentleman took a Lease of it at 61 *l. per Ann.* After the Death of Mr. *Mason* and his Son, it fell to Capt. *Henry Skelliecorn*, the present Proprietor and Possessor, in Right of his Lady, Mr. *Mason's* Daughter, who coming to it in Summer 1738, has built two large stately Rooms for the Drinkers, besides several other Conveniencies; secured the Spring from all extraneous Matters,
covered

Judicious to determine which of them is the most meritorious of the two.

(1) To my own Knowledge I believe I may very safely say, that the elastic Ætherial Mineral Spirits have never been extracted from the *Cheltenham* Waters; I shall therefore pass
over

covered it over with a Shade, and laid a pretty large Court about it of Freestone, and built a Shade round the Court to the Wall, and made curious Gravel Walks, &c. and goes on still to improve it, being a Gentleman of the greatest Integrity, Tenderness, Humanity and Benevolence; who courts Opportunities of shewing Compassion, and doing good Offices to the Afflicted, though never so needy or destitute, yet possessed of an Estate that renders him quite independant of the Profits of the Spaw. All below the Well is Clay or Marle; for though great Quantities have been dug up at several times; to five or six Feet deep, yet they reached no other Strata of Earth, or other Outbreaks of the Water. The Spring is five Feet under the Surface, yet the Water rises up exceeding clear, of a bitter salt Taste, weighs as it rises up 50 Grains in a Pint heavier than common Water, but encreases 20 Grains more in Weight, by standing a little; the Spring affords only 35 Pints in an Hour, which is sufficient for 350 Drinkers. The neat Stone Receiver being contrived to contain all its Water for 36 Hours; it has a close Board Frame and Lock over it, and a Pump at one Corner, to clear off the collected Water into Bottles, and come at the fresh Spring, as it rises up. It is drank from one Pint to three, and purges powerfully, being a very Brine of Nitre, and the only one yet discovered in all the Counties whose Mineral Waters I have examined; hence whilst other Places boast of their Purging Waters, *Cheltenham* has just Cause not to envy, but glory and triumph over them all, both for the Richness, Singularity, and Success of her Waters, according to the Quality and Use of them in so few Years; which I cannot express better than in the Words of an ingenious Gentleman, who has been an Eye-Witness for many Years, and made faithful and judicious Observations on its Effects, *Nov. 3, 1738.* “ Sir, you may depend upon the following Account, being carefully repeated
“ Observations of my own, in all scorbutick Habits of Body,
“ the Waters are of universal Esteem with great Justice, and
“ will cure old scorbutick Ulcers, though of twenty Years standing, even in the Legs, which being the most depending Part,
E “ I take

over in Silence my first Experiment, without any Comparifon whatever.

(2) The *Cheltenham* Water did not retain its Texture, fo long as that of the *Hyde* Spaw, related Experiment XI. the former yielding Precipitate the fifth and fixth Day, the latter
not

“ I take to be the moft difficult. Eryfipelas, ftumous Inflam-
“ mations of the Eyes, and thofe tormenting Pains of the Hips
“ and Lumber Mufcles, from Lodgment of hot ſcorbutick
“ Salts, that fuch Numbers of People are fo often afflicted with;
“ and feldom cured in any other Place. In the Gravel it is
“ very ferviceable, by cooling and washing the urinary Paflages.
“ In Affthmas I have heard it much praifed, but never faw it
“ ufed in that Cafe. It never fails to give a keen Appetite,
“ and if drank at the Spring, immediately pumped up, it gives
“ great Life and Chearfulnefs to the Spirits. Tho’ the Vulgar
“ drink it in large Quantities, yet from half a Pint to a Quart
“ daily is fufficient for any Conftitution; a Pint drank at Bed-
“ time, will lie quiet (that would purge in two Hours in the
“ Morning) is eafily fet agoing next Morning with a moderate
“ Dofe.—I muft farther take Notice, that the Water is a great
“ Provoker of Venery.”

I cannot here omit fome Things more remarkable, which I have not obferved in any other Clafs, as 1. Its greater Exemption from gritty coarfe Earth and Sand; having only a little fubtile fine impalpable alkaline Earth mixt with its Salt. 2. The quicker and eafier chryftalize immediately in a ftrong Lixivium, as in one Night, by the Water thrown out of a Glaſs or Mug; at the Spring the Salts chryftalize prefently like clear transparent Ice on the Pavers, and Sides of the Well. 3. The Chryftals ftand longeſt in the open Air of any *Sal calcarium* I have met with, fo that I have had them ftand feveral very rainy Seasons, not moiſt or liquified in the leaſt. 4. Its Salts are not only the bittereſt I have taſted, but inftead of cooling and chilling the Mouth and Tongue, like other Nitre, they warm and give a Glow, fomewhat like Marine Salt. 5. Though the Chryftals, like other Nitre, will not ferment in the leaſt with Marine Salt or Alum, even in the ftrongeſt Acid Spirits, yet the Water ferments the moſt violently with them, and turns Syrup of Violets the deepeſt and ſooneſt green of any, eſpecially when the Water is hot, for then twenty Drops of the Spirits put to a Spoonful of Water, makes it foam and hiſs. The Water was warmed
in

not till the Twelfth; but as these Experiments were made in *London*, on the best of both Sorts that I could get, yet I will not from hence draw any Conclusions, to the Disadvantage of *Cheltenham*, for this Reason, that very probably this Water had been some Months longer in Town, than that from the *Hyde Spaw*, which perhaps might occasion the Difference.

(3) The *Hyde Spaw Waters* do not carry any gritty, coarse Earth or Sand with them, but are endued with a subtile fine impalpable alkaline Earth, as evidently appears from Experiment XXXIII. to Experiment XXXVII. so that in this Point the *Hyde Waters* are fully equal to those of *Cheltenham*, according to Doctor *Short's* Experiment; but from our Experiments XXV. to XXXIII. it indisputably appears, that the *Hyde Spaw Waters* contain more Salts, and less alkaline Earth; therefore it is no ways to be wondered at, if it should be found that these Waters hold their Texture longer, and are in every other Re-

in a Vial well corked, and inverted in a Pan of Water; thus, it also turned quickly purple, with Solution of Silver, and an opac Blood Red with Campechy. From the peculiar Warmth of its Salts it neither chills the Drinkers, like other rich nitrous Waters, nor heats them, like those impregnated with Marine Salts. 6. This Water operates with the greatest Ease of any Purging Waters, being never attended with Gripes, Tenesmus, or Straining at Stool. 7. It most effectually and powerfully cleanses the Uropœia from Sand, Sludge, and small Stones, without leaving its own coarse Earth in the Blood or Passages, to the Foundation of a fresh Fit. What a noble rich nitrous Water, with a fine healthy clear Air and dry Situation can do, for Recovery or Preservation of Health, may be expected here.

28 *Hyde Waters compared*

spect preferable to those as *Cheltenham*, as having four Grains of Salts more in each Quart of Water, which certainly must give them greatly the Advantage, being so much better, as the Difference of the Quantity of Salt in which they exceed.

(4) The Salts from the *Hyde Spaw Waters* are as easily obtained, and in the same Manner as from the *Cheltenham Waters*, according to Dr. *Short's* Relation of them, as will appear by Experiments the XXXIV. XXVI. and XXXI.

(5) That our *Hyde Spaw* saline Chrystals will equal, and stand as long in the open Air as the *Cheltenham* Chrystals did with Doctor *Short*, is beyond Dispute, and sufficiently verified by Experiment XXVI. for the strongest vitrioline Acids cannot any ways affect it; the natural Consequence follows, that the much weaker one, contained in the Air must leave it untouched.

(6) The *Hyde* Salts have exactly the same Taste, as those related by Doctor *Short* of the *Cheltenham* Salts.

(7) Not the least Ferment or Effervescence ensues with the *Hyde* Salts, and the strongest Acids, as is common to marine Salt and Alum, but are in every Respect equal to what Doctor *Short* has observed of the *Cheltenham* Salts, as proved by Experiment XXVI.

(8) That the *Hyde Waters* cause a Ferment with the concentrated vitriol Acids, like those of *Cheltenham*, according to Doctor *Short's* Trial, is proved by Experiment V.

(9) Doctor

(9) Doctor *Short* relates, ' That the *Cheltenham* Water was warmed in a Vial, well corked, and inverted in a Pan of Water; thus it also turned quickly Purple, with Solution of Silver, and an Opac Blood Red with Campechy.' I have with those Ingredients, and in the same Manner, tried the *Hyde* Spaw Water, and find them fully answer in every Respect with the just-mentioned Experiments of the *Cheltenham* Waters.

(10) The *Cheltenham* Waters cold, in Doctor *Short's* Trials, with Solution of Silver, turned milky; these of the *Hyde* Spaw did the same, as appears by Experiment XXII. *

(11) With Spirit of Salts the *Cheltenham* sparkles much, Experiment III. with *Hyde* Water answers the same in full Extent. *

(12) Doctor *Short* obtained a white Sediment with Oil of Tartar from the *Cheltenham*; we did the same from the *Hyde* Spaw Water, Experiment XI. *

(13) Galls change the *Cheltenham* Water to a muddy green Colour; the *Hyde* Water was in like Manner affected with Powder of Galls, as proves by Experiment XVI. *

(14) The *Cheltenham* Spaw turns milky with Sugar of Lead, and of a Pearl Colour with sublimate Mercury; the same Effect is produced on the *Hyde* Water, as appears in Experiment XIX. and XX. *

(15) Logwood tinges the *Cheltenham* Waters of a Claret Amber Colour; but these of the *Hyde* Spaw are changed by it into a deep beautiful

30 *Hyde Waters compared*

beautiful lasting Claret Colour, without any Sediment whatever, which Oil of Vitriol is not able to eradicate, as appears from Experiment XVII. and XVIII. which sufficiently proves the Superiority this indisputably has over that of *Cheltenham*. *

(16) By Spirits of Hartshorn the *Cheltenham* Waters are changed into a Pearl Colour; but these of the *Hyde* Spaw are turned very milky by the same Spirit, as may be seen in Experiment IX. *

(17) On Trial it will be evidently manifest, that the Phœnominons of the respective Experiments, will, with an equal Quantity of the *Hyde* Spaw Water, appear considerably stronger than in the *Cheltenham* Water; it would therefore give me infinite Satisfaction, if any Person will make these Experiments on both Waters, at one and the same Time.

Thus we see, that all and every individual Experiment that possibly can be made, plainly and indisputably proves, that the *Hyde* Waters are not only of the self-same Nature and Qualities, with those of *Cheltenham*, but that these of our *Hyde* Spaw possesses more of the salutary Contents, than those of *Cheltenham*.

Uudoubtedly the *Cheltenham* Waters have manifested themselves to be of excellent Virtues; but as the *Hyde* Spaw is of the very same Nature (and perhaps the Mother Spring) and

* The Experiments to the last six comparative Articles, are recorded in Doctor *Short's* natural, experimental and medicinal History of the principal Mineral Waters, Page 102, and 103.

contains at least four Grains of Salt more in each Quart, (which is a considerable Increase) it is but just to prefer them before the *Cheltenham* Waters; and this considerable Difference has conspicuously appeared, to those that have used both the *Cheltenham* and *Hyde Spaw* Waters.

The *Hyde* Waters contain less Alkaline Earth than the *Cheltenham*, and undoubtedly they are the better for it, because it renders the Union of this Water concrete, more intimate, solid, and lasting; but as this Earth in either of the Waters is so little, it possibly cannot be of any medicinal Service, we may therefore part with it, particularly when it is a Bar in their Way, and is more beneficial to keep so much of it only, as is necessary to give a Texture to the Salts.

As there very visibly appears, a brisker Æthereal Spirit in the *Hyde* Waters, than in those of *Cheltenham*, which I find no Cause to wonder at, because from the Nature of Things it seems to me, that the *Cheltenham* Spring is but a Branch or String of the original main subterraneous Current, and that certainly the *Hyde Spaw* Spring contains more, if not wholly in Possession of this intire Current.

The superior and stronger Dye that Logwood emits in the *Hyde Spaw* Water, plainly manifests (and would singly be a sufficient Proof, were we debarr'd of others) that this medicinal saline Water concrete is (1) more intimate in Union, (2) that it contains nothing destructive to this salutary Union, (3) that it is more elemental-
rily

32 *Hyde Waters compared, &c.*

rily rarified, (4) that its Alkaline Earth is more subtile and fine, and (5) the Salts are more powerfully, and better concreted in Nature's Alembic, than those in the *Cheltenham Waters*.

Spirit of Hartshorn, which turns the *Cheltenham* of a Pearl, but our *Hyde Water* of a very milky Colour, is another unexceptionable Evidence in its Favour, because the oily Part of this urinous Alkaly instantaneously unties the Salts from its watery Vehicle, and sets it at Liberty for Action; hence it is that this Water in a lesser Bulk, operates more mildly than those of *Cheltenham*; for when the Stomach is obliged to disengage the purging Particles from the Vehicle they are contained in, by Digestion, then Gripes, *Tenesmus*, and other melancholy Inconveniencies ensue.

The many other additional medicinal Benefits, we receive by the Superiority of the *Hyde Spaw*, I shall fully demonstrate in Part IV. as a more proper Place for this Purpose.

I shall not dwell any longer here on this Subject, nor take any Advantage of such Experiments, as Doctor *Short* has not made on the *Cheltenham Waters*; but that these of the *Hyde Spaw* are preferable to them, evidently and superfluously appears, from the Facts that have been related; I will therefore proceed to Part III. and set forth the Contents and Principles the *Hyde Waters* are possessed of; when at the same Time I shall have an Opportunity to distinguish, by other Gentlemen, some mistaken Principles and Contents of the *Cheltenham Waters*,

ters, and thus be serviceable to them, in setting their true natural Virtues in a more conspicuous Light.

P A R T III.

Corollaries and Conclusions from the Experiments, whereby their Virtues are rendered in a clear Light.

IT is from Experiments only, that we are able to judge, and determine with Certainty the Nature, Contents and Virtues, of the Medicinal Mineral Waters; and whoever presumes to take this Subject in Hand, must absolutely be a Master of rational Chemistry, else he bewilders himself into such a Labyrinth, which all the Helps of speculative Closet Learning is not able to disentangle him from, but must be for ever lost in his Chaos of Confusion; pretty much the same Case is that of the Essayer, in these Pursuits, if he, in his chemical System, belongs to the corpuscular Particle Faction, which is a Party in Chemistry that dwell upon Figures, Atoms, and occult Properties; but all this Rare-show Philosophy this our Subject will not admit of, because Necessity requires it should be made intelligible, by reducing and proving Facts from Facts; and if this most essential Point is neglected, it will remain dark and hidden, even to the occult Professors themselves; from hence it
F proceeded,

34 . . *Corollaries and Conclusions.*

proceeded, that Mr. Boyle looked upon the Analization of Mineral Water, as the most difficult Part, in all the Art of Chemistry; but the Cloud that hung over this Science in his Days, is now happily expelled, and thereby all Difficulties removed; so that we are now able to come with Certainty at the true Nature, Contents and Virtues of these so beneficial Medicinal Waters.

Having observed this necessary Method, in a strict Scrutiny of the *Hyde Spaw Waters*, which Experiments I have related in Part I. whereby every ingenious Reader (if he pleases) may try and examine these Waters himself, I shall therefore continue my Pursuit, by the same Rule, in the *Confectaria* or *Corollaries*, that I am now going to draw from the said Experiments, for the Establishment and Proof of the Nature, Contents and Virtues of the *Hyde Spaw*, which, by the same Parity of Reason, will render him a sufficient Judge, that this salubrious Water possesses all that I have related of it, although perhaps he may not be a Master of the chemical Science.

Corollary 1. The elastic Ætherial Mineral Spirits, from the *Hyde Spaw Water*, when according to the first Experiment obtained, prove themselves, in every Respect, to be of a most healing Quality, and do not retain any noxious Contents whatever. When this Method of extracting and examining the volatile Spirits of the Mineral Waters comes to be more universally known, it will prove of infinite Service, particularly as there are so many Waters

ters impregnated with heterogeneous Efflu-
viums ; hence it is, that many of the Mineral
Waters are so very detrimental to the *Hectics* ;
and even the *Selter* Waters, although so fa-
mous in Consumptions, are not exempted from
it, and is ever most dangerous when the *Pul-
mons* are affected ; but we may safely con-
clude from this first Experiment, that the
Hyde Spaw Water is good, salutary, and be-
nign in all Ages and Constitutions without
Exception, even if the Lungs are affected ;
because as Ambergrease (which is a fine Mi-
neral Balsam) is suitable to all in every Degree
and Stage of Life ; it is natural to suppose,
that its equal Constituent is endued with the
same Qualities ; and this Supposition is al-
ready confirmed, by the great Number of
Hectics, that have made Use of the *Hyde*
Spaw Waters without any ill Consequences,
although their Lungs were very much af-
fected.

Corol. 2. That this *Hyde* Spaw Water is most
intimately united in its Texture, is verified by
Experiment II. XVII. XVIII. XXXIII. and
as undoubtedly in the Space of twelve Days,
in the open Air, in the Month of *August*, a
considerable Part of the Vehicle Water must
exhale, and so naturally emit a Precipitate
for want of a Vehicle ; likewise as this Water
increases so little in Weight, by Carriage, from
the Spring-head to this Metropolis, it is there-
fore manifest, beyond Dispute, that the Tex-
ture of this Water is extraordinary Good, and

36 *Corollaries and Conclusions.*

may be exported to any Part of the World, and its Virtues preserved, if properly secured.

Corol. 3. That this Water contains an Acid, and this Acid dissolves the alkaline Earth, and Salts it contains, and unites it with the Vehicle Water, and renders it into a limpid clear State, as we receive it, is made evident with Experiments III. IV. V. and VI. but that the Saturation of this aquaous Mixture is come to a very exact Nicety, is obvious from Experiment VIII. where the Oil of Vitriol instantaneously changes the green Colour, caused by Syrup of Violets, into a Red, which could not have been done by the Oil of Vitriol, in case this Water had not been, in the most exact Manner, digested and saturated, with its Ingredients, by Nature in the subterraneous Elaboratory: And it is no less remarkable, that the Oil of Vitriol, and other Acids are so quickly united with it, so as to be hardly perceptible to the Senses, which plainly indicates its mineral lubricating Oils, overpowering those corrosive ones; therefore what great Things may we not expect from this Water, in correcting the Juices in the human Body?

In the Pursuit of Experiment V. it is a manifest Proof, that there is no Necessity for Steel and Sulphur to cause a natural Hot Bath, because there is not any Steel, Iron or Sulphur in the *Hyde Waters*, as will indisputably appear from these Conclusions; so that none of these received Ingredients can possibly have a Share in this our Experiment, and

yet

yet we see those vulgar Errors (though rationally refuted *) cannot be overcome by the *Literati* of the present Age. One hundred Years ago there was a much more solid and truer Knowledge on this Head in *England*, than there is at present, witness Doctor *French*, who gives us, in his Treatise of Distillation, an Account of a natural warm Spring, which he pursued with digging, in order to examine the Matter, that caused the Hotness to the Water; and after carefully passing through several Glebes and Lays of earthy Matter, he came at last to that, that would cause a Hotness in any common Water, by being strained through it: This Matter he plainly describes, not to be Iron or Sulphur; and that this was the true and only Method, to come at the Knowledge of it, is certain; it is therefore a little surprizing, that a long known Truth is so much forgot.

All Medicinal Mineral Waters, of every Denomination, are conceived and generated in the Bowels of the Earth, in the Manner just related; and to form a right Judgment, it is incumbent on every Essayer of Mineral Waters, to be well acquainted with the Lays of Earth, and other productive Matter, under the Surface, which Knowledge cannot be attained any other Way, than by Practice; and as the Welch Mountains plentifully abound in Mineral Waters, we should then meet with sounder and more rational Doctrine, in our present Subject, if every Writer on this Head did but examine

* See our Treatise on Chalybeate Waters, Chap. 2.

the Lays these Waters pass through, and in what Manner they receive the Mineral Contents, then the Picture might be drawn from the very Original.

A most ingenious Writer of the present Age very cunningly tells us, when he speaks of the *Acidum Vagum*, that prevades the subterraneous Caverns, thus: ‘ But what this Acid is, whether Principle or Element, they cannot tell. ‘ But whilst we are upon the Surface of the ‘ Globe, we cannot say certainly what is done ‘ in its Bowels; and when we are there, we ‘ shall cease judging of her Operations *.’ Thus far our Author; he might as well have told us, that to this Acid occult Properties were attributed, and he would equally have been intelligible, particularly as he did not take upon him to mend the Matter.

To answer then the first Question, I have long since fully and experimentally proved, that this Acid in the Air, call’d *Acidum Vagum*, is a Vitrioline one, and the very same sure and easy Process, I have laid down for extracting this Acid from the Air, may, with equal Success, be performed on the Air and Vapours that pass through the subterraneous Caverns; * as to the Part of our Ignorance of what is done in the Bowels of the Earth, is a gross Mistake, because a rational Miner is always acquainted

* The Contents, Virtues and Uses of *Neville Holt Spaw Water*, Page 22.

* Our Treatise on the Origin, Nature, and Virtues of *Chalybeate Waters*, &c. where, Page 29. this Process is fully related.

with the Nature of the Soil he works in, and has certain and never-failing Rules, to guide himself by †, which Rules are strictly agreeable to the true Laws of Nature, which is uniform and every where the same; and as the Currents of Medicinal Mineral Waters are never (or at least very seldom) so far from the Surface, as the Mineral Oars generally are, therefore as there are the same unerring Rules, to guide the Mineral-Water Effayer by, it must be strange indeed, if he should lose his Road, that has greatly the shortest, easiest and most beaten Way to travel.

Corol. 4. The green Colour, the Syrup of Violets strikes with the *Hyde* Spaw Water, according to Experiment VII. is owing to the small Quantity of alkaline Earth it contains, for it is possible that a small Quantity of alkaline Earth can, in its own Nature, operate and strike a green Colour with this Syrup, when a greater Part of alkaline Salts is not able to do it; because the latter are clogged in the Solution, and require a Bulk of their own, before they can be able to come into Contact of Action; but as the former are in small Atoms imperceptable to the naked Eye, diffused thro' the Water, in an unentangled Manner, they plainly shew forth of what Nature they are, so soon as the Criterion can affect them.

That there is but very little Power in the alkaline Earth this Water contains, is obvious from Experiment VIII. where the alkaline

† Our first Letter on Mining and Smelting; where Rules are laid down for a rational Miner.

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Nature in a Moment yields to the Acid, and at the same Time corroborates what has been before asserted, *viz.* that the small Quantity of alkaline Earth is the Cause of this green Colour; for did it proceed from alkaline Salts, it would cause an Effervescence, with the Oil of Vitriol; but as it mixes in the easiest and readiest Manner with it, and shews the Superiority of the Acids, by changing the green into a red Colour, which would not happen, were alkaline Salts in this Mixture.

This green colour'd Phænomenon is also produced with Syrup of Violets and Chalybeate Waters; but it proceeds in that Mixture from a quite different Cause, than what is mention'd here, which I have fully explained in another Place *.

Corol. 5. The Trials and Examinations with volatile and fixed Alkalies, as related in Experiments IX. X. XI. XII. and XIII. are no more than corroborating Proofs of what has been already advanced, as Principles of these Waters, *viz.* that the Acid is the uniter of their several Contents, such as Salts, Earth, &c. to the Vehicle Water, which being overpower'd by the Alkaly, this Union and Texture is destroyed, and the Earth precipitates in her natural Colour; it is therefore also agreeable to the Laws of Nature, that when an Acid is added to it, agreeable to Experiment XV. that it should reassume its former limpid Clearness,

* Our Treatise on the Origin, Nature, and Virtues of Chalybeate Waters, Page 114, 115, 116, and 117.

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but when this alkaline Earth is obtained, by a *Precipitation per se*, by standing as related Experiment II. then the Effervescence, with strong Acids is not near so great, as that mentioned by Doctor *Short*, on the precipitated Earth, out of the *Cheltenham* Water, with Alkalies; hence it is plain, that it contains neither Alkalies or Acids so much, as can be detrimental to any Constitution whatever.

Corol. 6. That the Salts of the *Hyde* Spaw Waters, contain a native Sal Ammoniac, is manifestly verified by Experiments XIV. XV. XXII. and XXXVIII. because (1) it is owing to the native Sal Ammoniac, that this Water, with Spirits of Hartshorn, and Oil of Vitriol, turns Red. (2) Of all Salts, none is obtainable with all its Parts, and Contents perfect, by Inspisation, and Sublimation, save that of the Ammoniac Genus; and (3) no other Salts than that of the Sal Ammoniac Kind, will turn smelted Glass for a short Time Red: Hence it is an undeniable Fact, that native Sal Ammoniac, makes up a great Part of the *Hyde* Salts.

Corol. 7. I am not only of the same Opinion with Doctor *Short* *, on the Experiments with Mercurii Sublimate, that the same can be of but very little Service, for the promoting of Knowledge in the present Subject; but I have also the like Opinion of those other Experiments, made with Sugar of Lead, Solution of Silver, or any other metalline So-

* Doctor *Short*'s Essay towards a natural, experimental and medicinal History of the principal Mineral Waters, Page 105.

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lution whatever; because it is experienced, that one Metal will precipitate another, both in a fused, and with a Menstruum, in a dissolved State: Hence it is manifest, no Stress can be laid on these Experiments; for at the best, they can do no more than precipitate the alkaline Earth, that is detained in the Waters. But as those of *Cheltenham* were tried, with these Ingredients, Necessity demanded, I should do the same with the *Hyde* Spaw, and that the latter appeared in every Respect equal with the first, is largely set forth in Part II. where the Experiments of both Waters are strictly compared, and thus the End is fully obtained, that I have aimed at in these Trials.

Corol. 8. That this *Hyde* Water contains all the salutary, and sanative Qualities, that has been discovered in the celebrated *Selters* Water, is evident from Experiment XVI. and XXIII. as will more fully appear, in comparing the Trials on the *Hyde* Spaw, with those made on the *Selters* Water*; and that the former are happily destitute of all heterogeneous Contents, that are found with those of the latter, has been sufficiently taken Notice of in Corollary 1. and therefore may justly challenge the Pre-eminence.

Corol. 9. The alkaline Earth in the *Hyde* Water, is of a fine light subtle Texture, and no ways endued with caustic Concomitants, (too frequent the Companion of Alkalies) as ap-

* See our Treatise on Chalybeate Waters, in the Appendix on *Selters* Water, Page 285.

pears by Experiment XXII. XXXV. XXXVI. XXXVII. in particular ought we to regard, that as the boiling Motion, is able to move it so easily, certainly the Animal Concoction can, without any Difficulty, transfer it to the lacteal Vessels; for most Poisons do the Mischief by their Ponderosity: Here let it be remarked, that Practitioners in Physick, ought to be extremely cautious in the Use of Mercurials; but as the *Magisteriums*, such as *Materia Perlate*, *Magisterium Zwelfferii*, *Magnesia Album*, and many others of the same Class, are justly celebrated in the Practice of Physick; it is therefore necessary to observe, that the white Earth of the *Hyde Water*, is greatly preferable to all the like artificial Preparations; because this Earth proves itself to be a natural *Magisterium*, and in these Cases, Nature always excels Art; for this Reason I would recommend, that the waste Water should all be saved, and the Earth precipitated out of it, which for its medicinal Virtues, would be far superior to the celebrated white *Magnesia*, so effectually used by young Children, in absorbing all acid Crudities in the *Prima Viæ*.

Corol. 10. The Salts of the *Hyde Spaw Waters*, are in their proper Denomination *Sal Enixum Ammoniac. Nativii*, or (to be more generally understood) a neutral Salt, with native Ammoniac; and that this is the only natural and true Name that can be given to these Salts, sufficiently appears from what has been already said in Corollary 6. where the native Ammoniac, with infallible Experiments,

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ments, is discovered, and the *Enixum*, or neutral Salt, is indisputably proved by Experiment XXVII. XXVIII. XXIX. of which choice salt Mixture, very few Springs have the Honour to boast. And as native Ammoniac and Borax, are the greatest Restorers, of all the salt Species to a decayed Constitution, or such a one, as has been injured by Debaucheries, that are known: It is therefore no Wonder, that in a Letter to Doctor *Short* *, the *Cheltenham* Water is accounted a great Provoker to Venery.

The Salts in our *Hyde* Spaw, being of the self-same Genus and Species, with those in the *Cheltenham* Waters, which by Doctor *Short* are pronounced to be a *Nitre*, in which Point I must entirely dissent from him; because I am well assured, from experimental Examinations, that not any Nitre, antient or modern, is to be found in either of these, or any other Mineral Waters. Another late anonymous Author † insists strenuously, and peremptorily, upon the Existency of Nitre in Mineral Waters; but as we are all liable to Mistakes, it is therefore not only our Christian, but also moral Duty, to rectify the Mistakes and Errors of our Brethren, particularly when they tend to the Prejudice of our Fellow Creatures, which I take to be the present Case; and as my real, and indeed only Design, is, to promote true and useful Knowledge, I hope,

* See our Note in this Dissertation, Part II. Page 24.

† The Contents, Virtues, and Uses of *Nevil Holt* Spaw Water, Page 22.

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by my Zeal, I shall not lose the good Opinion of my generous Friend Doctor *Short*; as I sincerely promise, that I will be corrigible for every Error I commit; on which I will presume, without further Hesitation, candidly to give the Reasons for my Dissent, from whence the Impossibility of antient and modern Nitre, in Mineral Waters will fully appear.

(1) The Name Nitre belongs at present intirely to Salt Petre; and whenever that Name or Word is made use of, it cannot be understood for any thing else, but Salt Petre.

(2) It is more intelligible to call a purging Salt, a neutral Salt, because it is really such a one; and as Nitre intirely belongs to Salt Petre, it therefore must cause a Confusion to call it by that Name.

(3) It is certain beyond Dispute, that Salt Petre is the modern Nitre; but I have more fully observed in another Place *, that it is for ever impossible to expect to find it in Mineral Waters.

(4) As the Nitre of the Antients is not known in these our Days, it is not possible to say what it was, and perhaps it may be intirely lost.

(5) There is greater Reason to suppose, from what is related of it, that the antient Nitre was a factious Salt, and not a native one, as our deeply learned Author mistakenly imagines.

* See our Treatise on Chalybeate Waters, Page 12.

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(6) The Effects and Qualities of the antient Nitre, as related by *Pliny* and others, are such as do not in any Respect resemble those we meet with in the Salts of Mineral Waters.

(7) Two Texts, out of holy Scripture, from *Prov. xxv. ver. 20.* and *Jerem. xi. ver. 22.* are quoted in Support of antient *Nitre* in Mineral Waters; but whatever our inimitable Author means, or aims at, by these sacred Quotations, I am really at a Loss to guess, because both Passages are intirely against him, and fully for our Purpose proves, that the Nitre of the Antients, has not any Manner of Resemblance with the Salts in Mineral Waters; but to make this more plain, I am obliged to give both Texts in their full Length; at *Prov. xxv. ver. 20.* it is thus, *As he that taketh away a Garment in cold Weather, and as Vinegar upon Nitre; so is he that singeth Songs to a heavy Heart.* That this Passage has not any Inference with the Salts in Mineral Waters, is manifest, because Vinegar, and the whole Acid Tribe, have not any Effects upon the purging Mineral Water Salts, as is certain from innumerable Experiments, but is very applicable to Salt Petre, the modern Nitre; because this Salt, as a natural Cooler, becomes more so by the Addition of Vinegar, and other Acids; hence that known chemical Experiment, of generating Snow and Ice in a warm Climate, is performed; so that there is great room to believe, our sacred Author of the Proverbs, could mean

mean no other than our present Salt Petre, when he speaks of Nitre, and not a meer fancied one in Mineral Waters.

The second Passage, *Jer. xi. 22.* is thus : *For though thou wash thee with Nitre, and take thee much Soap, yet thine Iniquity is marked before me, said the Lord God.* That our Mineral Water Salts, have no Connexion with the Nitre, the holy Prophet speaks of, is clear, because these Salts are, in no Respect, fit for washing and cleansing, but just diametrically opposite ; nor can the Mineral Water Salts be render'd sopenacious, by any Calcination, without the Addition of Charcoal mixt with it ; and then the Question will remain yet to be decided, Whether that small Quantity of Lee Salt, that is obtained by such Calcination, proceeds not, singly, and entirely, from the Charcoals, that were used in this Operation ? But by applying our Salt Petre, or modern Nitre, we may certainly come nearer the Prophet's Meaning, than we possibly can do with torturing, or raking Conjectures of antient Nitre, in Mineral Waters ; because the Lee of Salt Petre, before it is saturated for ChrySTALLIZATION, is as fit for washing, as any other urinous Lee whatever ; the urinous Nature, before Saturation, being predominant in the Salt Petre Lee ; and after ChrySTALLIZATION, Salt Petre may be calcined, without any Addition, into the best of sopenacious Salts ; so that the Qualities the Prophet demands in his Nitre, are completely to be found in Salt Petre, and not the meer
Shadow

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Shadow of an analogical Comparifon, in the Salts of Mineral Waters.

These are my Reasons (which I trust are fufficient) for not allowing, of any *Nitre* in Mineral Waters, which I fhall reft fatisfied with, till more convincing ones are offered me, and then I will, with the utmoft Pleafure, give them up, being no Bigot to my own Opinion. But it may perhaps be objected, that the Name of *Neutral* is too general a one, to thefe Salts, and that they require a more particular Description: Although it is plain, from what has been already faid, in the foregoing Differtation, that the Name *Nitre* is ftill lefs expreffive and diftinctive to thefe Salts, and cannot, by any Means, lay the leaft Claim to it, yet, for Argument fake, I will admit the Objection, but, at the fame Time, muft advife to give it a Name peculiar to its Nature, and therefore I think fit to call it *Sal Enixum*, with adding the Name of the next principal Content it partakes of, to it; and upon this Footing, I have very juftly called the *Hyde* Salts, *Sal Enixum Ammoniac. Nativii*; be-
 caufe, the next Part to the neutral Contents, in thefe Salts, is the Native Ammoniac, moft in Quantity; fo, on the other Hand, if the faline Texture, in any of thefe Salts, is of a Bolar or Iron Earth, then they might be very juftly call'd *Sal Enixum Bolarii*, *Sal Enixum Terra ferrii*, and fo *visæ verfæ*, according to their Alteration; and by thefe Means, I apprehend; we fhall come to the true Nature of the Salts we treat of.

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Corol. 11. That the Salts of the *Hyde Spaw* Water are effectual in attracting all Manner of Acids, is evident from Experiments III. and IV. from whence we may justly conclude, what has already been so fully verified by Facts, *viz.* that these saline Waters are very efficacious and powerful to discharge all acid Crudities, and sweeten the animal Juices; for as they so easily attract the Acid in an open Vessel, the same attractive Quality, must in Consequence be more powerful and conspicuous, when the animal Oeconomy is aiding and assisting it, by which Means Health and Vigour is conveyed to the Solids. As the fizy nephritic Matter generated from acid Crudities, that are mixed with the animal Juices, are always found destitute of Salts; and for want of discharging Salts, turn into perfect opac earthy Concretes; therefore by the same Parity of Reason, all this so troublesome nephritic Matter, may be attracted and discharged by a continued plentiful Use of these saline Waters, without the least Inconveniencies or Danger to the Vessels they circulate through, which I shall more fully illustrate in Part IV.

Corol. 12. From the Experiments that have been made, as related here, and the Conjectary drawn therefrom, we may safely conclude, that the *Hyde Spaw* Water is possessed and composed of the following Principles, and investigable Ingredients; (1) a balsamick ætherial elastic Spirit; (2) Sal Enixum Ammoniac. Nativii; (3) an Ambergrease Oil,

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which naturally contains, (4) Phlogiston or Inflammability; (5) fine subtile alkaline Earth; (6) Vitriol Acid, as the common natural Solvent; and (7) common elementary Water, which is the Vehicle in which all the afore-said Ingredients are dissolved, contained, and administered, for the Use of the Sick and Infirm; and thus I will conclude these experimental Corollaries, and proceed to the fourth and last Part of this Dissertation.

P A R T IV.

In what Distempers these Waters are salutary; and in what Manner they ought to be used.

HE that by Writing means to point out Remedies for Relief of the various Infirmities that are incident to the human Body, ought to regard this essentially, amongst the many other necessary Rules to be observed; namely, that above all Things, it is highly incumbent on him, to have the whole Stages of human Life, in both Sexes, constantly before him; because every Stage of Life in the Age of Man is incident to, and afflicted with its particular Diseases, the Seeds of which it seems are in our innate Nature, and brought with us into the World at our Birth; so that

our whole Lives upon this Globe, are nothing more than a meer Chain of Diseases from the Beginning to the End; or, according to *Hippocrates*, a perpetual Distemper. The all-wise and bountiful Creator, has indeed furnished us plentifully with such Things as we call Remedies, but in Reality they are no more perfect, than our corrupt Bodies, that must go through a State of Putrefaction, at the End of this troublesome Pilgrimage, into a State of Glory; so that at best what we call Remedies, are in Fact no more than periodical Relievers, or palliative Easiers of our Pains and Infirmities.

But as to every Stage, particular Diseases are incident, so, on the other Hand, particular Relievers are ordained by Providence to suit the several Degrees of Life; for what is good and necessary in one Stage, is detrimental and pernicious in another. This great Truth, which holds universally good, was so tenaciously observed by the sagacious Fathers in Physick, that they not only regarded the common Division of each Stage of Life, but also remarked the proper Distinctions, of the different Employments and Business of Men; and very judiciously considered, that the Distemper of the gluttonous sedentary Citizen, could not proceed from the same Cause, nor be of the same Nature and Origin, as that of the hard labouring Country Mechanick; and therefore pointed out such medicinal Treatment to the Afflicted, as was peculiarly adapted

to their several Callings, and Situations in Life *.

In the Pursuit of this Dissertation, I need not, in one Respect, regard the above-mentioned necessary Cautions, because the *Hyde Spaw Waters* are suitable to all, in every Calling and Stage of Life; and may be safely taken, from the sucking Infant, to the most decrepit, and worn-down Age of Man, without the least Hazard of Detriment to any Constitution whatever; and indeed this much I must say, in Justice to the Truth, that the *Hyde Spaw* and *Tar Waters*, are the first and only Medicines, I have ever yet met with, that are suitable to all, the several Vocations and Periods of Life.

Although this *Hyde Water* may be taken at all Times, and in all Constitutions, without Prejudice, yet it does not follow from hence, that it should be a Panacea, or Universal Remedy, for Relief of all the Infirmities that are entailed upon the human Body, in the several Ages and Busineses of Life; it is therefore necessary to point out the particular Distempers, its Virtues are particularly adapted to, and thus prevent an unbeneficial Use of them; which though they will not prove prejudicial to any, yet it is ever irksome where the Expectation is heightened, and the desired End of Relief is not obtained.

* See on this Head *Hippocrates, Stahl, Ramazzini, and Boerhaave.*

The scorbutic Disorder or Scurvy, according to the received Opinion, is an acrimonious salt Humour in the Blood, which breaks out in Irruptions of the Skin, and is commonly attributed to the great Quantity of salt Provisions: But all this is meer idle Jargon, and grounded on a false *Hypothesis*; because we should in this, as well as in all other Disorders, strictly observe Nature; and then we shall find, that the Scurvy Matter is generated for want of Salt, and proceeds not from the Abundance of it; for the Salt that Sea Provisions are seasoned with, changes its saline Nature into a State of Putrefaction, which mixes with the Juices of the Meat or Flesh, and composes a perfect glewy Substance, and this thick fizy Matter is swallowed with the daily Food, and thus received by the animal Juices, and so carried through the Circulation, where its Bulk prevents it from passing through the smaller Vessels, which by the Helps of strong mucilaginous Liquors, stagnates, and putrifies; and as the Coolness of the Air prevents its perspiring, it naturally must corrode, and ulcerate the Skin, and from thence it is called an *Endemical Disease* to these northern Climates; because our southern Neighbours are greatly freed from it, by Perspiration: But when the animal Juices are sufficiently impregnated with Salts, it is observed, that this glewy scurvy Matter thereby liquifies, and is discharged by Stool and Urine; hence it is, that the Use of Sea Water has been often beneficial in the Scurvy.

In a high Station of Life, the Scurvy is bred in the same Manner, as before related in that of a low seafaring one, only that the Means is different; because high Sauces and Gravies, are equally able to overload the animal Juices, with this glewy scurvy Matter, as Sea Provisions are, and therefore require the same saline Remedies to remove them.

By the same natural Rule, I take the Scurvy, from ten to fifteen Years of Age, to be such a Stage Distemper, that breeds innumerable others, for the succeeding Periods of Life, but a Difference in Mode, as the Vocation and Constitution will admit of; as for Instance, in the hard-labouring Sailor, it will turn to a *Leprosy*, but in a young, strong, high-feeding Gentleman, into *Erysipelas*, and Inflammations. And the farther we trace this Matter, the Scurvy, as the original Sources, will never leave us; because in a Leporic Sailor the mucilaginous, fizy Glew, will at last corrode and obstruct the circulatory Vessels, and so bring on Jaundice and Dropsy, which will end in dissolving the Soul from the Body: But with the well and easy living Citizen, it passes through the several Stages, and visits him with strumous Inflammations of the Eyes, exquisite Pains of the Hips and Lumber Muscles, Rheumatisms, &c. till at last it determines in its highest Perfection, which is either the Gravel, Stone, or Gout; and then we have a full Opportunity to examine this fizy Glew in a chemical Manner, which, at this Period of Life, is changed into a friable infusible Earth; and the strongest

Fire,

Fire is not able to calcine, or produce one Grain of Salt out of it; but, on the contrary, if Salts are added to it, it is soon destroyed; so that to the very last it testifies, what has been so fully established, by Experience, *viz.* that evacuating saline Medicines are the only Reliefs, in these Distempers, from the first to the last Stage of them.

The ingenious and most learned Doctor *Thompson* is the first *English* Physician that was acquainted with Nature, to understand and rightly observe this natural Chain of Distempers, and the Consequences ensuing therefrom; as fully appears in his excellent Treatise on the Gout, whereunto, for Brevity's Sake, I am obliged to refer the judicious Reader. It also cannot be denied (let the envious Brethren of the Faculty cavil against it as much as they please) but must be confessed as a Truth, that Doctor *Thompson* is the very first Physician here in *England*, that in a rational, and natural Manner, prescribed the saline purging Waters, which, before his Time, were only known by Name to the Physical Tribe.

As it is then plain, from the Dictates of Nature, that in the saline Medicines only, we must look for Liquifiers, and Dischargers of this fizy scorbutic Matter, in so many Shapes irksome and prejudicial to our Constitutions; it necessarily follows to be considered, Which of the Salts we may expect to find Relievers in this Case? It is true, the *Alkaline*, *Nitre*, *Polychrest*, and neutral Salts, have, by Experience, been found serviceable, but never
proved

proved a complete Relief, in this Chaos of Disorders ; because their diuretic and scouring Quality is such, that it intirely destroys the Mucus that guards the Vessels, if used in so large a Quantity, as is necessary to give Relief, and thereby brings on a worse Distemper than it is intended to remove ; but this Deficiency we labour under, in Respect to all artificial Productions, is happily remedied, and thoroughly rectified in Nature's Furnace, by kindly supplying us with the Addition of a native Ammoniac, to the Salts in the *Hyde Waters*, which, in every Respect, improves this natural Medicine ; because this Fossil is not only efficacious in restoring the injured Vessel, but likewise extremely so, in dissolving those unhealthy Concretes ; and therefore the greatest Naturalists in all Ages, from their own Experience, have bestowed the highest Praises upon it *. Thus we see, that the *Hyde Spaw Water* has not any Impediment in its Way, so as to be noxious in one Shape or other, as most Medicines commonly are ; but, on the contrary, is a safe, and in all Degrees complete Reliever in that Series of Diseases above related, and fully manifests what has been before observed, *viz.* to be a safe, easy Medicine, in all Degrees and Stages of Life.

It is a prevailing Custom of this debauched Age, to drink *Rhenish* Wine with Chalybeate Spaw, or *Selters* Water, with Sugar, in the Summer, for a Cooler, and often for a Morn-

* See Henkel, Stahl, Newman, Alberti, and Boerhaave.

ing Whet, as it is called ; but this I must condemn as a bad Custom, and very prejudicial to Health ; because the Chalybeate, in this Practice, inflames the Lungs, and the corrosive Contents in the *Selters* Water are as pernicious in other Respects. I am utterly against immoderate and unseasonable Drinking ; but for those that cannot conquer this habitual Evil, it is most adviseable to take such Liquors as are the least detrimental ; therefore, as these noxious Qualities are not in the *Hyde Spaw* Waters, and the Taste full as pleasant with Wine, as with any foreign Water, it is to be recommended to use with the *Rhenish*, in Preference to all others.

What I have here said on Drinking, must be understood of the general Abuse of it ; because, to drink *Hyde Spaw* Water with Wine for the common Beverage, is not only very salutary, but in some chronical Cases in a Manner necessary ; as I shall more fully set forth hereafter.

The *Morphew* is a Distemper that has greatly baffled the modern Practitioners in Physick ; because there plainly appears an Obstruction and corrosive Matter, which shews itself on the Breast above the Lungs in cutaneous Eruptions ; in short, we may take it for granted, that the Lungs in this Disorder are obstructed ; hence that moving exquisite Pain, so much complained of by those afflicted with it, ensues : However, I shall not enlarge upon the Nature of this Distemper here, but only

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a Word out of Compassion to those that are afflicted; I would advise not to tamper with Mercurials, and other usual Evacuatives, but first go through a Course of Balsamicks, so as to strengthen the Lungs, that they may afterwards be able to bear the necessary Evacuations; then to take about four or five Doses of *Pill. Anticocachemia, D. D. Ræfnerii*, and then they will complete the whole, with going through a Course of the *Hyde Spaw Waters*, for two or three Months, according to the short or long Standing this Disorder is of; because it is with repeated Evacuation, both Diureticks and Catharticks, that we must expect to conquer this Distemper, and nothing so fitting and adapted to it, as our saline *Hyde Waters*; for they preserve and strengthen the circulatory Vessels, at the same Time that they unload them from their Malignancy.

Upon the same sure Foundation that the *Morphew* is relieved, we must expect to promote Ease in *Asthmas*; because so long as the gross Obstructions in the capital Vessels are not removed, we can gain nothing; and in this Case violent Medicines are always dangerous, because the tender Vessels of the Lungs are, by the Obstructions, extended beyond their proper Dimension; so that if any additional Burthen is thrown upon them, they must in Consequence break, and be destroyed; therefore nothing but a mild Dissolver, and easy Evacuator, such as the *Hyde Spaw Waters*, is required, or safe to be given in this Distemper.

All Manner of Obstructions in the Fair Sex, such as natural Impediments to Breeding, or Ladies that are come to the critical Stage of Life, in which their Menfes leave them, and are at this constitutional Revolution averſe to the neceſſary Evacuation of Cupping and Bleeding *, may be ſure to find Relief in the *Hyde Spaw Waters*; and, with theſe gentle eaſy Evacuations, prepare themſelves for the Enjoyment of the remaining Part of Life, and even preſerve Health, Spirit, and Vigour to old Age, without any bloody or diſagreeable Operations on their tender Bodies.

From what has been ſaid, and according to the Laws of Nature, we may take it for granted, that theſe ſaline Waters are highly beneficial in all Sorts of Scurfs, Scald-heads, Tettars, Pimples in the Face, Ring-worms, habitual Coſtivenefs, Tumors, Swellings, all ſharp and corroding Humours in the Blood, and even King's Evil itſelf; in which laſt Caſe I am very certain, that the *Hyde Spaw Waters* will be much more efficacious, than any Thing the Iron Boxmaker of *Birmingham's* Angel-like Youth is able to perform.

Having thus taken Notice of the general Diſtempers, in which the *Hyde Spaw Waters* are ſovereign Relievers, and as the leſſer Diſeaſes of the ſame Nature depend on the general ones, it is quite unneceſſary to be more particular on that Head here; therefore I

* See our Treatiſe on Chalybeate Waters, Page 129, and 130.

shall now proceed to the Directions and Rules proper to be observed in Drinking and Bathing in these Waters.

(1) *Hyde* Water ought to be drank out of long narrow Glaffes, so that it may be gradually swallowed down with the ætherial Spirits, which so much exhales in large open ones; and never more than a Quarter of a Pint to be drank at a Time, and fifteen Minutes Distance between each Dose, till the Quantity required is taken.

(2) In the Beginning of a Course of Drinking these Waters, small Doses ought to be taken; and the best Method in this Respect, is to begin with a Quarter of a Pint every Night, when going to Bed, and the succeeding Morning take from one to four Drams of the *Hyde* Salts, in half a Pint of the Water; and when by this Means the Body gently physicks, the Water may be daily increased with a Quarter of a Pint, till it is sufficient to purge of itself, without the Addition of the Salts.

(3) In all and every Disorder in which this Water is used, there must not be so much taken of it every Day, as will occasion Purging, but as an Alterative, so that it may have Time and Power to search and circulate with the Blood, and correct the Juices in the most extended Parts; and when taken in this Manner, a Quarter of a Pint every fourth Hour, in a tender Constitution, so as to make up a Pint in the whole Day, will be sufficient;

cient; but to a hail strong Constitution more may be given; by this Means it will require a longer Course of Drinking; but as it is a sure Way of reaping Benefit, it certainly must be of more material Consequence, than the Loss of Time for five or six Weeks, in so essential a Matter as removing a Malady, and restoring a broken Constitution to Health and Vigour.

(4) It is impossible ever to ascertain one general Quantity in a Dose of Physick, because some Constitutions are easy to be worked with a small Dose, others not without a large one; in this Circumstance, every Patient ought to observe his own Constitution for a Guide, and never drink more of these Waters than is barely necessary to purge; nor would I advise ever to provoke more than four or five purging Stools each Day; for when it amounts to more than that Number, it becomes unnatural; from which no Service can be expected, but, on the contrary, unhealthy Consequences must ensue.

(5) In the first Stage of the *Scurvy*, it is necessary to drink these Waters for five or six Weeks together, at the Spring-head, or, if that is not convenient to the Patient, for eight or nine Weeks at a Distance, on Account of some Part of the Efficacy that the Water may have lost by Carriage. For young People I would advise them to try first the Drinking, and avoid Bathing as much as possible, because the latter weakens those Vessels, that
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they naturally desire should be strong; and indeed Drinking only, in the first Degree of the Scurvy, will be found sufficient; but for those that are afflicted with Tettars and Ulcers, in such a Case Necessity has no Law, and Bathing is absolutely required.

(6) In *Erysipelas*, Inflammations of the Eyes, or any other Part of the Body, these Waters may be taken at all Times and Seasons of the Year; but in these Distempers it must be taken plentifully, because immediate Evacuations are required; and if they do not of themselves sufficiently purge, some of their Salts must be added, particularly when Bleeding, Cupping, or Scarification is omitted; not but one of these Evacuations is extremely beneficial, and sometimes absolutely necessary in these Cases, with the Waters; but in all these Disorders Bathing must be avoided, unless it be an *Erysipelas*, and the same is scarified, then it may be fomented to Advantage with warm *Hyde* Water.

(7) Leprosies, King's Evil, and the like ulcerated Distempers, require Bathing, as well as Drinking; but such Patients ought to begin with Drinking only, and continue it for three or four Weeks, at least as Purges and Alteratives, so as to dispose the corrupt Juices for a Discharge; then they may begin to Bathe, and at the same Time continue Drinking and Purging with these Waters, as much as the Constitution of the Patient will admit of; but on such Days when they purge, it is proper to refrain from Bathing.

(8) In

(8) In the Gravel and Stone, these Waters must be drank for some Days as an Alterative, before Purging is thought of, and then it will be better to add some of its Salts to it, so as to make it less in Bulk, and answer the Power of a greater Quantity; but when the Patient is of a rigid Fibre, Bathing in these Waters may be used to the greatest Advantage, as it lubricates the Vessels, so that they are able to extend themselves, and expel the peccant Matter they are loaded with; but as the Gravel is sometimes brought on by a lax Fibre, in this Situation, Bathing absolutely must be omitted, and from Drinking only to expect Service; this Water being a Restorer of the injured Vessels.

(9) In a gouty Habit of Body, it is necessary to purge twice or three Times in every Month, with *Hyde Spaw Water*; by this Means the gouty Matter may be kept under, and not in any Respect endanger the Constitution; but when a Fit of the Gout is actually on, then instead of this saline Water, it is advisable to take from four to six Drams of the *Hyde Salts*, once in every three Days, and to work it off with thin warm Water-gruel: In this Disorder, as well as in Asthmas, Gravel, Stone, &c. these Waters may be made Use of, mixed with Wine, at Meals, for the common Drink, with the same extraordinary Advantage as the *Selter Waters* are taken, in like Manner, in some Parts of *Germany*.

(10) Such Ladies as are afflicted with Obstructions, and the Blood is sizy, for want
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of Serum, may drink this Water at all Seasons, only observing to begin with small Quantities, and purge three or four Times with the *Hyde* Salts, before larger Doses of the Water are taken, and always to use gentle Exercise with it; in this Case, if the Fibre is strong and rigid, it is advisable to bathe in these Waters, which may be done whenever Occasion requires it, without regarding the Time of the Year.

(11) For such of the Fair Sex that are in the Stage of Life when the *Menses* usually leave them, and are willing to prepare themselves accordingly with these Waters, ought to drink them Spring and Fall, for two or three Years; and it is necessary to begin with this Preparation, as soon as they perceive any Symptoms of a Decrease of the natural Flux, then the Course of Drinking in the Spring must be for six Weeks, at least; in which Time they ought to purge fifteen or sixteen Times with these Waters; if their Constitutions are tender, they had better take some of the Salts with it, so as to reduce the Bulk, and produce the same Effects; and when the Time of Drinking is finished, to bathe five or six Times after it: But in the Fall of the Leaf, three Weeks Drinking, and about eight or nine Times purging with these Waters, will be sufficient, with a few Bathings, to finish and complete the whole.

(12) If it was known of what great Efficacy the *Hyde* Spaw Waters and Salts are, in all Sorts of *Venereal* Diseases, and restoring the Constitution, when injured by the Malignancy of

of this Disorder, or the Mercurials used for Relief, I am very sure all those noxious Loads of Mercurial Preparations, so much now in Vogue, would be soon justly discarded; but whenever the Water is used for this Purpose, it is necessary to methodise the Manner of it particularly; which is a Business I shall not enter into in this Place.

(13) The Baths that are made of this Water, ought to be but very little more than Milk-warm, and by no Means too hot; because the Salts soak better into the Body, when moderately warm; for which Reason it is necessary to remain longer in these Baths, than in any other; sometimes it ought to be weaken'd with common Water, or to be made stronger, as the various Circumstances of the bathing Patients may require it; particularly, this Rule ought to be observed in Scurfy Cases, where the Body is full of Scabs and Ulcers; and for such, in the beginning of Bathing, the Water should be weaken'd, the easier to soften the Scabs and Tettars; after which the Bath may be made stronger with the *Hyde Waters*.

Cold Bathing in the *Hyde Waters* cannot be of any real Service; therefore I shall say nothing on that Head: All other necessary Rules to be observed, in the Use of these artificial Baths, of natural cold Medicinal Mineral Waters, I have fully laid down in my Treatise on Chalybeate Waters; to which, for Brevity's sake, I refer.

(14) When the Course of Bathing is finished, it is necessary to purge two or three Times
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with the *Hyde* Water and Salts, within the Space of five or six Days after it, so as to cleanse and discharge all such Juices, as, by the Means of the Bathing, may have settled upon the Entrails, and thereby avoid all ill Consequences whatsoever.

(15) It is as necessary to observe Rules in Diet, Exercise, &c. in the Course of Drinking the *Hyde* Waters, as in the Use of other Medicinal Mineral Waters; and these Rules I have fully pointed out in Chap. III. and X. of my Treatise on Chalybeate Waters, to which I refer the Reader.

(16) And lastly, I must take Leave to give the general necessary Caution, *viz.* never to bleed in the Use of *Hyde* Spaw Waters, unless the Constitution of the Patient has been accustomed to it, or in Asthmas, or such like Circumstances, that renders it absolutely necessary; because these Waters are such powerful, yet easy Evacuators, that if injudicious Bleeding is added to their Use, it destroys the Habit and Texture of the Blood, ruins the unhappy Patient so tampered with, and instead of restoring Health and Vigour, brings him into a State of Misery, for the Remainder of his Life.

Mineral Waters of all Kinds, sold Wholesale and Retail, (for ready Money only) at the Duke of Cumberland's Arms and Wheat-sheaf in Tavistock-Street, Covent-Garden, by Richard Fiddes and Elizabeth Jones.

THE following Waters are delivered fresh, and in the best Perfection, to any Part of the Town; and as fresh Mineral Waters are judged extremely conducive to Health: Therefore the above R. Fiddes and E. Jones take in this Respect all possible Care, not only to import these Waters genuine, but also to preserve the volatile Spirits, as the most salutary Part these natural Medicines possess.

HYDE Purging Water, near Cheltenham, is sold, Wholesale, by John Timbrell, the Proprietor (who rents under the Right Hon. the Lord Craven) in the Parish of Prestbury, Gloucestershire.



The above Water, and the Salts, are to be had of Mr. Richard Fiddes and Mrs. Elizabeth Jones, at their Mineral Water Warehouse in Tavistock-Street, Covent-Garden; at Mr. James Coward's, in the Bridge-Yard, Southwark; and no where else in London: Also of

Mr. *Charleton*, in *Gloucester*; Mr. *John Pinchbeck*, at the *Sun* in *Cirencester*; Mr. *Nicholson*, Apothecary, in *Warwick*; Mr. *Jobson*, in *Coventry*; Mr. *Sanders*, Apothecary, in *Sturbridge*; Mr. *Berrow's* Printing Office, *Worcester*; Mrs. *Baylis*, in *Tewksbury*; and Mr. *Clark's*, in *Cheltenham*.

Any other Person in the Country, inclined to sell this Water and Salts, may, by applying to the above *John Timbrell*, depend upon being faithfully served.

N. B. All the Bottles are sealed with the Lord *Craven's* Crest, as in the Margin.

There is a very good *Hot* and *Cold* BATH, near the above Water; by which *Baths*, great Cures have been performed, as several can testify, and they are daily used with the highest Advantage. Convenient Lodgings may also be had for those who come to bathe.

The following Testimonials have been transmitted to Mr. *R. Fiddes* and *E. Jones*, from the Magistrates of *Spa*, and the Bottles, which formerly were sealed with the Bishop of *Liege's* Arms, are now sealed as in the Margin, the Magistrates having recovered the *Pouhon Spa*, by a Law-suit, from the Bishop and Prince of *Liege*, before the Aulic Council of the *German Empire*.

We the BURGO-MASTERS and *Senators* of *Spa* do hereby certify and attest, for the
Sake

Sake of Justice and Truth,
that several Quantities of our
Mineral Waters of *Spa*, which
Mr. *Alexander Hay*, Merchant,
residing here, has caused to be
filled, in his Presence, by Or-
der of Mr. *R. Fiddes* and Mrs.



E. Jones, and were filled at the *Pouhon* Spring,
when the Water was in its greatest Perfection,
being sealed and done up, with all imaginable
Care, agreeable to our Certificates, sent with
each Quantity of Water to the said Mr.
Richard Fiddes and Mrs. *Elizabeth Jones*. In
Witness whereof we have caused our Secretary
to sign and seal these Presents, at the said Town
of *Spa*.

Spa in Germany, May 18, 1751.

This is to certify, that I *Alexander Hay* of
Spa, have contracted with Mr. *R. Fiddes* and
Mrs. *E. Jones*, of *London*, to sell our true
Pouhon Water: The said *R. Fiddes* and *E. Jones*
having engaged not to *deal in any false Water*.
The Nobility and Gentry may be assured,
that the *Pouhon* Water, sent to the above-
mention'd Dealers, is taken up at the only
proper Season, and secured in the most effectual
Manner, by me,

Alex. Hay.

R. Fiddes



R. Fiddes and *E. Jones* also sell the celebrated *Shadwell Water*, in the best Perfection, as it is taken up at the Fountain-head, and sealed as in the Margin, with the Coat of Arms of *Walter Berry, Esq;* the Proprietor.

PYRMONT.



The said *Richard Fiddes* and *Elizabeth Jones* have settled such Correspondence for the *Pyrmont* in large and small Bottles, that its Goodness may be entirely depended upon. The *Pyrmont Water* is sealed with the Prince of *Waldeck's Arms*.



Selters Water is imported by the said *R. Fiddes* and *E. Jones*, from the original Fountain-head, and in a particular Method preserved, after imported, by putting the Jugs in a certain agreeable Mixture, which is found to answer the desired Success of keeping up the medicinal Standard.



The true and upright *Bath Water* is sealed with the Arms of that City, and round it the Name of the present Pumper.

The

The *Bristol* Water of the Hot Well, constantly fresh and good, and certified by the Proprietors of the Well.



The *Scarborough* Water in the best Perfection, filled by the Direction and Care of Mr. *Culmer Cockerill*, Apothecary of that Place, and sealed with the Corporation Arms, as in the Margin, and the Salts of this Water prepared by Mr. *Cockerill*, according to Dr. *Shaw's* Direction.



The said *R. Fiddes* and *E. Jones* sell the *Neville Holt, Cheltenham, Acton, Harragate, Lincoln Waters, &c.* and in general all the Medicinal Mineral Waters in Request.

THE STATE OF NEW YORK
IN SENATE
January 10, 1894.
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